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Alpha and Omega Semiconductor Unveils Industry's Smallest Smart Motor Module Designed to Meet Reduced PCB Layout Requirements

Highly Integrated AOZ9530QV Smart Motor Module (SMM) Features Adjustable Gate Drive Current Control that Provides a Low EMI, Higher Efficiency Solution for 1-Phase/3-Phase BLDC Motor Drive Designs

SUNNYVALE, Calif., Oct. 19, 2022, [Alpha and Omega Semiconductor Limited](#) (AOS) (Nasdaq: AOSL), a designer, developer and global supplier of a broad range of power semiconductors, power ICs, and digital power products, today introduced an extension to its compact Smart Motor Module (SMM) family. Available in an ultra-compact, thermally enhanced 3mm x 3mm QFN-18L package, the highly integrated [AOZ9530QV](#) SMM is a half-bridge power stage with a slew of features and protections that simplify motor drive designs. The AOZ9530QV SMM is suitable for use in a large number of BLDC fan applications ranging from PC and server fans, seat cooling and home appliances.

The new AOZ9530QV features multiple advanced protection functions that include short circuit protection, over temperature protection, Vcc UVLO and bootstrap UVLO. With an input voltage up to 28 V and supporting high current up to 7 A, the AOZ9530QV has a wide operating (-40°C to +125°C) ambient temperature range and offers 100 percent pulse-width modulation (PWM) duty operation support. The new device also provides adjustable gate drive sink and source current control that gives designers the ability to minimize EMI while maximizing power efficiency. These features and others make the AOZ9530QV an optimal power stage solution for Brushless DC (BLDC) motor drives. Two AOZ9530QV SMMs would be used for single-phase motor drive, and three AOZ9530QV SMMs are needed for 3-Phase designs.

Technical Highlights

- Smallest 3x3 QFN-18L SMM package helps reduce layout space/PCB size
- Integrated bootstrap diode
- Adjustable gate drive current control for EMI and enhanced efficiency
- Self-powered Vcc
- Included multiple protections (OTP, SCP, Vcc UVLO, Bootstrap UVLO)
- Wide input operation voltage up to 28V, supports output current up to 7A
- Supports 100% PWM duty operation
- Low 11mOhm RDS(ON) internal NFETs in half bridge configuration

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“We designed the AOZ9530QV in a compact 3mm x 3mm QFN package to satisfy higher density, space-constrained design trends in BLDC motor drives. In several cooling fan applications, the PCB for drive circuitry is enclosed within the fan assembly. The AOZ9530QV enables shrinking of the PCB enabling a system designer to increase the size of the fan blades, thus pushing more air within a given form factor,” said Armin Hsu, Power IC Senior Marketing Manager at AOS.

Pricing and Availability

The AOZ9530QV is immediately available in production quantities with a lead-time of 24 weeks. The unit price in 1,000-piece quantities is \$1.00 USD. AOS products are offered in packages with Pb-free plating and compliant to RoHS standards.

About AOS

Alpha and Omega Semiconductor Limited, or [AOS](http://www.aosmd.com), is a designer, developer, and global supplier of a broad range of power semiconductors, including a wide portfolio of [Power MOSFET](#), [IGBT](#), [IPM](#), [TVS](#), [HVIC](#), [SiC](#), [Power IC](#), and [Digital Power](#) products. AOS has developed extensive intellectual property and technical knowledge that encompasses the latest advancements in the power semiconductor industry, which enables us to introduce innovative products to address the increasingly complex power requirements of advanced electronics. AOS differentiates itself by integrating its Discrete and IC semiconductor process technology, product design, and advanced packaging know-how to develop high-performance power management solutions. AOS’s portfolio of products targets high-volume applications, including portable computers, flat-panel TVs, LED lighting, smartphones, battery packs, consumer and industrial motor controls, automotive electronics, and power supplies for TVs, computers, servers, and telecommunications equipment. For more information, please visit www.aosmd.com.

Forward-Looking Statements

This press release contains forward-looking statements based on current expectations, estimates, forecasts, and projections of future performance based on management’s judgment, beliefs, current trends, and anticipated product performance. These forward-looking statements include, without limitation, references to the efficiency and capability of new products and the potential to expand into new markets. Forward-looking statements involve risks and uncertainties that may cause actual results to differ materially from those contained in the forward-looking statements. These factors include, but are not limited to, the actual product performance in volume production, the quality and reliability of the product, our ability to achieve design wins, the general business and economic conditions, the state of the semiconductor industry, and other risks as described in the Company's annual report and other filings with the U.S. Securities and Exchange Commission. Although the Company believes that the expectations reflected in the forward-looking statements are reasonable, it cannot guarantee future results, level of activity, performance, or achievements. You should not place undue reliance on these forward-looking statements. All information provided in this press release is as of today’s date, unless otherwise stated, and AOS undertakes no duty to update such information, except as required under applicable law.

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